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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/717,855   | 11/19/2003  | Teruhiko Nawata      | 1217-032260         | 1711             |
| 28259  | 7590        | 03/30/2005           | EXAMINER            |                  |
| WEBB ZIESENHEIM LOGSDON ORKIN & HANSON, P.C.<br>700 KOPPERS BUILDING<br>436 SEVENTH AVENUE<br>PITTSBURGH, PA 15219 |             |                      | NGUYEN, NGOC YEN M  |                  |
|  |             |                      | ART UNIT            | PAPER NUMBER     |
|  |             |                      | 1754                |                  |

DATE MAILED: 03/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/717,855

Applicant(s)

NAWATA ET AL

Examiner

Ngoc-Yen M. Nguyen

Art Unit

1754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

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## DETAILED ACTION

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Garibin et al (6,673,150).

Garibin '150 discloses a calcium fluoride monocrystal with diameter of 300 mm (= 30 cm), a thickness of 70 mm (= 7 cm), an optical uniformity of  $(1-3) \times 10^{-6}$  and a birefringence of 1-3 nm/cm (note column 4, lines 20-22).

The product of Garibin '150 anticipates the claimed product.

Alternatively, the “as grown” limitation in the preamble is considered as a “product by process” limitation. However, when the examiner has found a substantially similar product as in the applied prior art, the burden of proof is shifted to applicant to establish that their product is patentably distinct and not the examiner to show the same process of making. *In re Brown*, 173 USPQ 685 and *In re Fessmann*, 180 USPQ 324.

Claims 1-2 are rejected under 35 U.S.C. 102(b) as anticipated by Ginoulakis et al (6,309,461).

Ginoulakis '461 discloses a method for crystal growth and annealing with minimized residual stress and suitable for production of calcium fluoride crystal (note column 1, lines 9-12). The calcium fluoride crystal is used for optical element (note column 1, lines 22-30). This fairly teaches that the calcium fluoride crystal is a single crystal calcium fluoride.

The calcium fluoride crystal as a diameter of at least 6 inches (= 15.24 cm), such as 8 inches (= 20.32 cm) (as shown in Figure 6). The birefringence is substantially uniform and less than 1 nm/cm (note Figure 8).

The product of Ginoulakis '461 anticipates the claimed product.

Claims 1-2 are rejected under 35 U.S.C. 102(e) as anticipated by Li et al (2004/0099205).

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Li '205 discloses a calcium fluoride crystal for making optical elements for transmitting below 200 nm ultraviolet light having a [100] crystallographic orientation and a diameter greater than or equal to approximately 250 mm and exhibiting a mean birefringence no greater than approximately 1.2 nm/cm and inhomogeneity no greater than approximately 1.1 ppm (note claim 23).

The product of Li '205 anticipates the claimed product.

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Li '205 or Gianoulaskis et al '461 in view of either Garibin '150.

For the "as grown" limitation, *In re Brown*, 173 USPQ 685 and *In re Fessmann*, 180 USPQ 324.

Li '205 or Gianoulaskis does not specifically disclose the thickness of the calcium fluoride crystal.

Garibin '150 discloses a calcium fluoride product as stated above. Garibin '150 fairly teaches that for optical fluoride crystals, large calcium fluoride crystal with a thickness of 70 mm is desirable (note column 4, lines 20-22).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the process condition in Li '205 or Gianoulaskis '461 in order to obtain a calcium fluoride crystal with a thickness of 70 mm, as suggested by Garibin '150 because such thickness is desirable when calcium fluoride crystal is used in optical application.

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The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoc-Yen M. Nguyen whose telephone number is (571) 272-1356. The examiner is currently on Part time schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Stan Silverman can be reached on (571) 272-1358. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed (571) 272-1700.



Ngoc-Yen M. Nguyen  
Primary Examiner  
Art Unit 1754

nmn  
March 20, 2005